REMARKS/ARGUMENTS

In response to the Office Action mailed November 30, 2006, Applicants amend their application and request reconsideration. In this Amendment no claims are added or cancelled so that claims 1, 2, 4-8, and 10-16 remain pending.

Request for Completion of Acknowledgement of Priority Claim and Priority Document

Through the long prosecution of this patent application, Applicants have requested, three times, acknowledgement of the priority claim and receipt of the priority document. The Official Action acknowledges, at page 2, receipt of the priority document. Applicants respectfully request that the acknowledgement of receipt of the priority document and of the priority claim be completed by checking of the appropriate three boxes of the PTOL-326 form in the next communication.

Prior Art Rejections

In the foregoing Amendment, independent claims 1, 7, and 15 are amended. All other amendments are clearly non-substantive in nature, conforming dependent claims to the amended independent claims and correcting other apparent, but minor, errors.

The amendment of claim 1 basically reorganizes parts of the claim and makes clearer, consistent with the disclosure of the patent application, the correction of the operation period timer by the timer synchronous unit. A similar amendment is made with respect to claim 7. Claim 15 is amended to include, as originally intended, an operation period timer as in the other independent claims. In the embodiment of Figure 21, to which claims 15 and 16 pertain, the operation period timer, as in other embodiments, corresponds to either or both of elements 11a and 11b.

Claims 1, 2, 4-8, and 10-14 were rejected as unpatentable over Voth (U.S. Patent 6,351,821) in view of Circo (U.S. Patent 4,677,614). This rejection is respectfully traversed.

In rejecting independent claim 7, the Office Action from page 2, paragraph 5 through page 4, paragraph 17, asserts that Voth describes a periodic control synchronous system as in claim 7 but without the operation period timer that controls the operation period of the device itself. To fill that gap, reliance was placed upon Circo as allegedly disclosing such a timer.

Further, it was asserted that it would have been obvious to have modified Voth with Circo. Applicants respectfully disagree with these assertions.

As described in Voth, for example, in column 1, lines 17-19, Voth relates to a system and method of synchronizing real time clocks within nodes of a computer cluster. Voth describes a conventional system in which a slave node clock is corrected, based upon a time difference between a time indicated by a slave node clock and a synchronous timing time indicated by a master clock. This correction occurs at a synchronous timing indicated by a master node clock because the slave note does not have a second timer corresponding to the operation period timer described in claim 7.

However, the invention as defined by claim 7 is fundamentally distinct from Voth because the operation period time, in the invention, is corrected by the timer synchronous unit, based upon the timer correction value. That timer correction value is determined based upon a first time difference between a global time, indicated by the global timer of the device, and a synchronous timing time, indicated by the controller. Further, the correction occurs at a synchronous timing indicated by operation period timer, not the master node clock, because the device includes that operation period timer.

The patent application expressly describes, from page 24, line 18 to page 25, line 5, that the timer synchronous unit 12, or the synchronous units 12a and 12b, calculates a timer correction value, D1, of the control period timer 10, or of the operation period timers 11a and 11b, from the time difference between the global time of the global timers 7, 8a, and 8b. The timing correction occurs at the local synchronous timing of the control period timer 10 of the operation period timers 11a and 11b at a time synchronous with the periodic control. The timer correction value D1 is thus set in the control period timer 10 or the operation period timers 11a and 11b. As a result, time deviation between the period of periodic control and the control period timer 10, or operation period timers 11a and 11b, is corrected and the operation period coincides with the period of periodic control. Voth fails to describe these timing correction features, contrary to the assertion of the Official Action.

Circo merely describes in the passage cited, column 14, line 57 through column 15, line 35, that the recovered clock at each node is effectively in frequency synchronism with the loop instant master clock, which corresponds to the controller of the present invention. Circo describes, in column 15, at lines 27-35, that the master clock at any one node may become the loop instant master clock simply by switching the master clock at any node onto

the loop, together with the respective master clock receive data. Thus, the loop master clock is merely the on-board master clock originating in any given dual master/slave node 13 that is, at a particular instant in time, acting as the loop master node. Accordingly, Applicants submit that Circo fails to supply the part of claim 7 acknowledged to be missing from Voth. Therefore, claim 7 and its dependent claims 8 and 10-14, are patentable over the asserted combination of Voth and Circo. Further discussion with respect to those dependent claims is not necessary nor provided in view of the failure to establish *prima facie* obviousness as to claim 7.

As in the other Office Actions issued in the prosecution of this patent application, there is no express description of the grounds for rejection of any of the claims within the group of claims 1, 2, and 4-6. Although this examination technique has been questioned, the technique has not changed. Therefore, Applicants respond to the rejection of claims 1, 2, and 4-6 on the same basis as the response to the rejection of claim 7, namely that *prima facie* obviousness has not been established with respect to claim 7 by Voth in combination with Circo. Therefore, obviousness cannot have been established with respect to claims 1, 2, and 4-6, in view of the similarity of limitations found in those claims and claim 7 and its dependent claims.

Claim 15 and 16 were rejected as unpatentable over Voth and "what is well known in the art." This rejection is also respectfully traversed.

According to the Office Action, Voth teaches a periodic control synchronous system for synchronizing periodic control between a controller connected to first and second networks. The Office Action acknowledges that Voth does not expressly teach a second global timer for the devices connected to the second network as described in claim 15. It is, however, the Examiner's view that it would have been obvious to one of ordinary skill in the art to have added such a second global timer to the devices connected to the second network, thereby meeting the part of claim 15 admittedly missing from Voth. According to the Examiner, adding that second global timer would be a mere duplication of previously described structures.

However, as described in amended claim 15, an operation period timer controls the operation period of each device itself, i.e., internally, and the periodic control unit synchronizes the operation period. That synchronization is with the control period using the synchronous timing time of the periodic control, as indicated by the time stamp of the

periodic transfer packet, and the global time, as indicated by the third global timer, at a synchronous timing indicated by the operation period timer. This arrangement is significantly different from what is described as Voth and the differences are not "what is well known", presumably meaning the duplication referred to in paragraph 35 of the Office Action. Thus, *prima facie* obviousness of claim 15 and its dependent claim 16 has not been demonstrated, particularly with respect to the claims 15 and 16 presented here. The rejection should be withdrawn.

Reconsideration and allowance of all claims now pending are earnestly solicited.

Respectfully submitted,

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